

## **ABSTRACT**

**[00296]** The present invention concerns methods, compositions and apparatus for detecting, identifying and/or quantifying target cells or pathogens. In certain embodiments of the invention, the cells or pathogens may be detected by detection of a specific nucleic acid. In other embodiments, the cells or pathogens may be detected by use of an aptamer or a tagged protein that binds to the cells or pathogens. Alternatively, the cells or pathogens may be immobilized on a solid surface and endogenous ATP and/or PPi detected. In preferred embodiments of the invention, the ATP and/or PPi are detected by a process utilizing luciferase mediated bioluminescence, such as BRC. In other preferred embodiments, thermostable enzymes may be used in either isothermal or cyclic thermal reactions to generate PPi. Apparatus and compositions for cell or pathogen analysis are also disclosed.